# SPYWOLF

## Security Audit Report

CONTRACTS ARE DEPLOYED ON TESTNET

Completed on

**July 24, 2022**

MADE IN USA 🇺🇸

SPYWOLF.CO @SPYWOLFNETWORK @SPYWOLFNETWORK

# OVERVIEW

This audit has been prepared for **Fortunas Finance** to review the main aspects of the project to help investors make make an informative decision during their research process.

You will find a a summarized review of the following key points:

- ✔ Contract's source code
- ✔ Owners' wallets
- ✔ Tokenomics
- ✔ Team transparency and goals
- ✔ Website's age, code, security and UX
- ✔ Whitepaper and roadmap
- ✔ Social media & online presence

*The results of this audit are purely based on the team's evaluation and does not guarantee nor reflect the projects outcome and goal*

- SPYWOLF Team -

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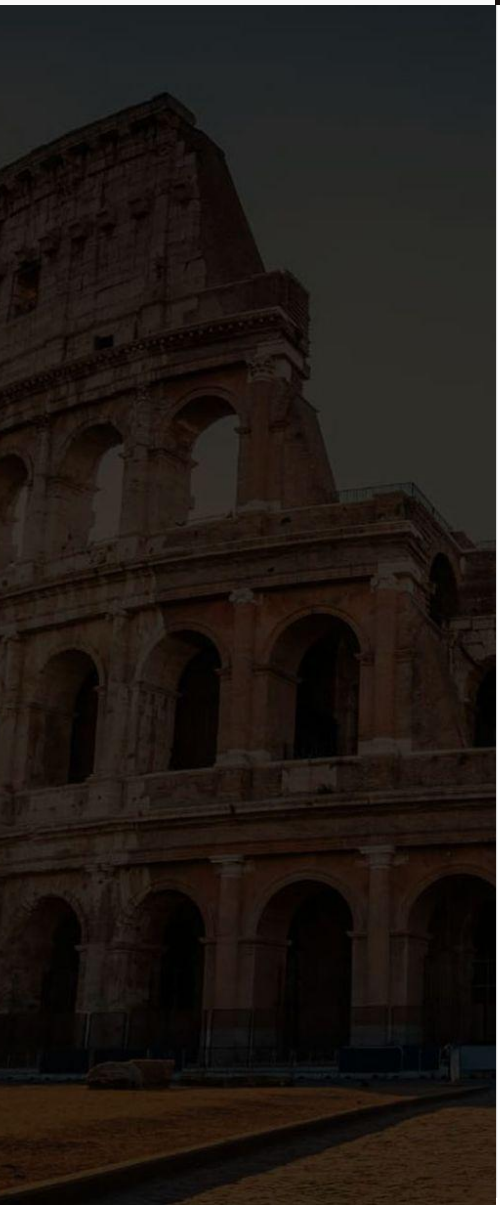
# Fortunas Finance



## PROJECT DESCRIPTION

**According to their website,** Fortunas Finance is building a smart Defi ecosystem, one that has a fundamental grasp on the principle of supply and demand. Gone are the days of Ponzinomics, every Fortunas Finance investor requires contributing resources in order to generate cash flow. By using a smart risk-reward structure, we are building an exciting protocol that will reward holders for years to come. All while building multiple revenue streams and garnering investor trust.

**Release Date:** Presale starts on July, 2021

**Category:** Rewards/APY

# CONTRACT INFO

Token Name
Fortunas Token

Symbol
FRTNA

Contract Address
0x7759D8345badb3cBec4ff0AC0BE08Ad9BBc8A2A8

Network
Rinkeby TESTNET

Language
Solidity

Deployment Date
July 21, 2022

Verified?
Yes

Total Supply
500,000,000

Status
Deployed

# TAXES

Buy Tax
**10%**

Sell Tax
**10%**

*Taxes can be changed in future

# Our Contract Review Process

The contract review process pays special attention to the following:

- Testing the smart contracts against both common and uncommon vulnerabilities
- Assessing the codebase to ensure compliance with current best practices and industry standards.
- Ensuring contract logic meets the specifications and intentions of the client.
- Cross referencing contract structure and implementation against similar smart contracts produced by industry leaders.
- Thorough line-by-line manual review of the entire codebase by industry experts.

**Blockchain security tools used:**

- OpenZeppelin
- Mythril
- Solidity Compiler
- Hardhat

# CURRENT STATS

(As of July 22, 2022)

Liquidity

Not added yet

Burn

No burnt tokens

Status:

**Not Launched!**

MaxTxAmount

No limit

DEX:

Unknown

## LP Address(es)

**Liquidity not added yet**

# TOKEN TRANSFERS STATS

| | |
|---|---|
| **Transfer Count** | Token is deployed on testnet |
| **Uniq Senders** | Token is deployed on testnet |
| **Uniq Receivers** | Token is deployed on testnet |
| **Total Amount** | Token is deployed on testnet |
| **Median Transfer Amount** | Token is deployed on testnet |
| **Average Transfer Amount** | Token is deployed on testnet |
| **First transfer date** | Token is deployed on testnet |
| **Last transfer date** | Token is deployed on testnet |
| **Days token transferred** | Token is deployed on testnet |

# SMART CONTRACT STATS

| | |
|---|---|
| **Calls Count** | Token is deployed on testnet |
| **External calls** | Token is deployed on testnet |
| **Internal calls** | Token is deployed on testnet |
| **Transactions count** | Token is deployed on testnet |
| **Uniq Callers** | Token is deployed on testnet |
| **Days contract called** | Token is deployed on testnet |
| **Last transaction time** | Token is deployed on testnet |
| **Created** | Token is deployed on testnet |
| **Create TX** | Token is deployed on testnet |
| **Creator** | Token is deployed on testnet |

# FEATURED WALLETS

| | |
|---|---|
| **Owner address** | 0x45faf7923bab5a5380515e055ca700519b3e4705 |
| **Fortunas ledger** | 0xb68a57b10936f342e17490f58957def62939a479 |
| **Liquidity wallet** | Same as owner |
| **Reward wallet** | 0x3edce801a3f1851675e68589844b1b412eac6b07 |
| **Treasury wallet** | 0x49a61ba8e25fbd58ce9b30e1276c4eb41dd80a80 |
| **LP address** | **Liquidity not added yet** |

# TOP 3 UNLOCKED WALLETS

1 N/A N/A

N/A N/A 2

3 N/A N/A

# VULNERABILITY CHECK

| | |
|---|---|
| Design Logic | Passed |
| Compiler warnings. | Passed |
| Private user data leaks | Passed |
| Timestamp dependence | Passed |
| Integer overflow and underflow | Passed |
| Race conditions and reentrancy. Cross-function race conditions | Passed |
| Possible delays in data delivery | Passed |
| Oracle calls | Passed |
| Front running | Passed |
| DoS with Revert | Passed |
| DoS with block gas limit | Passed |
| Methods execution permissions | Passed |
| Economy model | Passed |
| Impact of the exchange rate on the logic | Passed |
| Malicious Event log | Passed |
| Scoping and declarations | Passed |
| Uninitialized storage pointers | Passed |
| Arithmetic accuracy | Passed |
| Cross-function race conditions | Passed |
| Safe Zeppelin module | Passed |
| Fallback function security | Passed |

# THREAT LEVELS

When performing smart contract audits, our specialists look for known vulnerabilities as well as logical and access control issues within the code. The exploitation of these issues by malicious actors may cause serious financial damage to projects that failed to get an audit in time. We categorize these vulnerabilities by the following levels:

## High Risk

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

## Medium Risk

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

## Low Risk

Issues on this level are minor details and warning that can remain unfixed.

## Informational

Information level is to offer suggestions for improvement of efficacy or security for features with a risk free factor.

# FOUND THREATS

## ⚠ High Risk

Owner can change reward wallet.
When claimLedger() function is triggered, if the rewards wallet balance is zero, rewards owed to the holder called the function will be minted (this will create and add additional tokens to the total supply).

```
function updateRewardWallet(address newRewardWallet) public onlyOwner {
    require(newRewardWallet != rewardWallet,
    "FRTNA::The staking wallet is already this address");
    excludeFromFees(rewardWallet, false);
    excludeFromFees(newRewardWallet, true);
    emit UpdatedRewardWallet(newRewardWallet, rewardWallet);
    rewardWallet = newRewardWallet;
}

function claimLedger() external {
.....................
if (isMint) {
    if (rewardWalletBalance != 0) {
        _transfer(rewardWallet, msg.sender, rewardWalletBalance);
    }

    _mint(msg.sender, totalPassiveRewards.sub(rewardWalletBalance));
}
.....................
}
```

# FOUND THREATS

## ⚠ Medium Risk

Battling contract can mint new tokens and burn existing tokens.

```
modifier onlyContract {
    require(msg.sender == battling,
    "FRTNA::Only Fortunas Battling Contract can call this function");
    _;
}

function mint(address account, uint256 amount) external onlyContract {
    _mint(account, amount);
}

function burn(address account, uint256 amount) external onlyContract {
    _burn(account, amount);
}
```

# ⚠ Low Risk

Owner can set buy/sell fees up to 10% (combined buy+sell=20%).

```
uint256 public maxBuyingFee;
uint256 public maxSellingFee;
uint256 public immutable multiplierForTotalFee;

uint256 _liquidityBuyingFee = 25;
uint256 _treasuryBuyingFee = 75;
uint256 _burnBuyingFee = 0;

uint256 _liquiditySellingFee = 50;
uint256 _treasurySellingFee = 25;
uint256 _burnSellingFee = 25;

maxBuyingFee = _liquidityBuyingFee.add(_treasuryBuyingFee).add(_burnBuyingFee);
maxSellingFee = _liquiditySellingFee.add(_treasurySellingFee).add(_burnSellingFee);

function updateBuyingFees(uint256 newLiquidityBuyingFee,
 uint256 newTreasuryBuyingFee, uint256 newBurnBuyingFee) public onlyOwner {
    uint256 totalInputFee = newLiquidityBuyingFee.add(newTreasuryBuyingFee).add(newBurnBuyingFee);
    require(totalInputFee <= maxBuyingFee, "FRTNA::Cannot exceed total Buying fees");

    liquidityBuyingFee = newLiquidityBuyingFee;
    treasuryBuyingFee = newTreasuryBuyingFee;
    burnBuyingFee = newBurnBuyingFee;
}

function updateSellingFees(uint256 newLiquiditySellingFee,
 uint256 newTreasurySellingFee, uint256 newBurnSellingFee) public onlyOwner {
    uint256 totalInputFee = newLiquiditySellingFee.add(newTreasurySellingFee).add(newBurnSellingFee);
    require(totalInputFee <= maxSellingFee, "FRTNA::Cannot exceed total selling fees");

    liquiditySellingFee = newLiquiditySellingFee;
    treasurySellingFee = newTreasurySellingFee;
    burnSellingFee = newBurnSellingFee;
}
```

# Informational

Owner can set battling contract only once.

```
function initializeBattling(address battlingContractAddress) external onlyOwner {
    require(battling == address(0), "FRTNA::Battling has already been initialized");
    battling = battlingContractAddress;

    excludeFromPassiveRewards(battling, true);

    excludeFromFees(battling, true);
}
```

Owner can exclude address from fees.

```
function excludeFromFees(address account, bool excluded) public onlyOwner {
    require(isExcludedFromFees[account] != excluded, "FRTNA::Account is already the value of 'excluded'");
    isExcludedFromFees[account] = excluded;

    emit ExcludedFromFees(account, excluded);
}

function excludeMultipleAccountsFromFees(address[] calldata accounts, bool excluded) public onlyOwner {
    for(uint256 i = 0; i < accounts.length; i++) {
        isExcludedFromFees[accounts[i]] = excluded;
    }

    emit ExcludedMultipleAccountsFromFees(accounts, excluded);
}
```

# Informational

Owner can exclude address from passive rewards.

```
function excludeFromPassiveRewards(address account, bool excluded) public onlyOwner {
    require(isExcludedFromPassiveRewards[account] != excluded,
    "FRTNA::Account is already the value of 'excluded'");

    isExcludedFromPassiveRewards[account] = excluded;
}

function excludeMultipleAccountsFromPassiveRewards(
address[] calldata accounts, bool excluded) public onlyOwner {

    for(uint256 i = 0; i < accounts.length; i++) {
        isExcludedFromPassiveRewards[accounts[i]] = excluded;
    }
}
```

RECOMMENDATIONS FOR

# GOOD PRACTICES

1. Consider fundamental tradeoffs
2. Be attentive to blockchain properties
3. Ensure careful rollouts
4. Keep contracts simple
5. Stay up to date and track development

## Fortunas Finance

### GOOD PRACTICES FOUND

- ✔ The owner cannot stop or pause the contract
- ✔ The owner cannot set a transaction limit
- ✔ The smart contract utilizes "SafeMath" to prevent overflows

# CONTRACT INFO

| Token Name | Symbol |
| --- | --- |
| Battling | N/A |

Contract Address
0xf80a3e6641754f0c6aBD6651e6FD123D0b6fbe42

| Network | Language |
| --- | --- |
| Rinkeby TESTNET | Solidity |

| Deployment Date | Verified? |
| --- | --- |
| July 21, 2022 | Yes |

| Total Supply | Status |
| --- | --- |
| N/A | Deployed |

# TAXES

| Buy Tax | Sell Tax |
| --- | --- |
| N/A | N/A |

*There are 0.5% taxes leaving a battle

# Our Contract Review Process

The contract review process pays special attention to the following:

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# FEATURED WALLETS

| | |
|---|---|
| **Owner address** | 0x45faf7923bab5a5380515e055ca700519b3e4705 |
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| **Treasury wallet** | 0x49a61ba8e25fbd58ce9b30e1276c4eb41dd80a80 |
| **LP address** | **Liquidity not added yet** |

# TOP 3 UNLOCKED WALLETS

1 N/A N/A

2 N/A N/A

3 N/A N/A

# FOUND THREATS

## ⚠ Medium Risk

The removeTroops() and endBattle() functions mint new tokens in the fortunasToken's contract and distribute them as holder rewards if the rewardWallet is empty.
This can lead in token's price inflation in future.

```
IFortunasToken public fortunasToken;
constructor(address _fortunasToken, address _fortunasAssets) {
........
fortunasToken = IFortunasToken(_fortunasToken);
........
}

function endBattle(uint8 _battleType) external {
..................
if (isMint) {
if (rewardWalletBalance != 0) {
    fortunasToken.transferFrom(rewardWallet, msg.sender, rewardWalletBalance);
}
fortunasToken.mint(msg.sender, rewardsToReturn.sub(rewardWalletBalance));
}
else {
fortunasToken.transferFrom(rewardWallet, msg.sender, rewardsToReturn);
}
..................
}

function removeTroops(uint256 _amountToRemove,uint8 _battleType)
external validBattle(_battleType) {
..................
if (isMint) {
if (rewardWalletBalance != 0) {
    fortunasToken.transferFrom(rewardWallet, msg.sender, rewardWalletBalance);
}
fortunasToken.mint(msg.sender, rewardsToRemove.sub(rewardWalletBalance));
}
else {
fortunasToken.transferFrom(rewardWallet, msg.sender, rewardsToRemove);
}
..................
}
```

# Informational

Owner can change treasury and rewards wallet address.

```
function setTreasuryWallet(address _treasuryWallet) external onlyOwner {
    require(treasuryWallet != _treasuryWallet, "setTreasuryWallet::TW");
    emit UpdatedTreasuryWallet(_treasuryWallet, treasuryWallet);
    treasuryWallet = _treasuryWallet;
}

function setRewardWallet(address _rewardWallet) external onlyOwner {
    require(rewardWallet != _rewardWallet, "setRewardWallet::RW");
    emit UpdatedRewardWallet(_rewardWallet, rewardWallet);
    rewardWallet = _rewardWallet;
}
```

Owner can change battle percentage rates.

```
function setBattleResetPercentage(uint256 _battleResetPercentage) external onlyOwner {
    require(battleResetPercentage != _battleResetPercentage, "setBattleResetPercentage::BRP");
    emit UpdatedBattleResetPercentage(_battleResetPercentage, battleResetPercentage);
    battleResetPercentage = _battleResetPercentage;
}
```

Functions with onlyOwner restriction are involved into external functions. This can lead to revert of the call.

```
modifier onlyOwner() {
require(owner() == _msgSender(), "Ownable: caller is not the owner");
_;
}

function createAssetRandomness() external view onlyOwner returns (uint256) {}

function calculateRewards(Battle memory _tempBattle)
public view onlyOwner returns (Battle memory) {}

function calculateRewardsForEndBattle(Battle memory _tempBattle)
external view onlyOwner returns (Battle memory) {}

function calculateRations(Battle memory _tempBattle,uint256 _rationDays)
external view onlyOwner returns (uint256) {}

function createRandomness(uint256 _chance, uint256 _multiplier, uint256 _helper)
public view onlyOwner returns (bool) {}
```

# CONTRACT INFO

| Token Name | Symbol |
| --- | --- |
| FortunasAssets | N/A |

Contract Address
0x23759224FE11D9C948100f7f98140b32f4F2AB4f

| Network | Language |
| --- | --- |
| Rinkeby TESTNET | Solidity |

| Deployment Date | Verified? |
| --- | --- |
| July 21, 2022 | Yes |

| Total Supply | Status |
| --- | --- |
| N/A | Deployed |

# TAXES

Buy Tax
**none**

Sell Tax
**none**

# Our Contract Review Process

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# FEATURED WALLETS

| | |
|---|---|
| **Owner address** | 0x45faf7923bab5a5380515e055ca700519b3e4705 |
| **Battling** | 0xf80a3e6641754f0c6abd6651e6fd123d0b6fbe42 |
| **LP address** | **Liquidity not added yet** |

# TOP 3 UNLOCKED WALLETS

1 N/A N/A

2 N/A N/A

3 N/A N/A

# FOUND THREATS

## ⚠ Medium Risk

Owner can disable NFT transfers.

```
function setIsTransferEnabled(
    bool _state
) external onlyOwner {
    require(isTransferEnabled != _state,
    "setIsTransferEnabled::isTransferEnabled is already set to this state");
    isTransferEnabled = _state;
}
```

# Informational

Owner can initialize battling address once.

```
function initializeBattling(
    address _battling
) external onlyOwner {
    require(battling == address(0),
    "initializeBattling::Battling has already been initialized");
    battling = _battling;
}
```

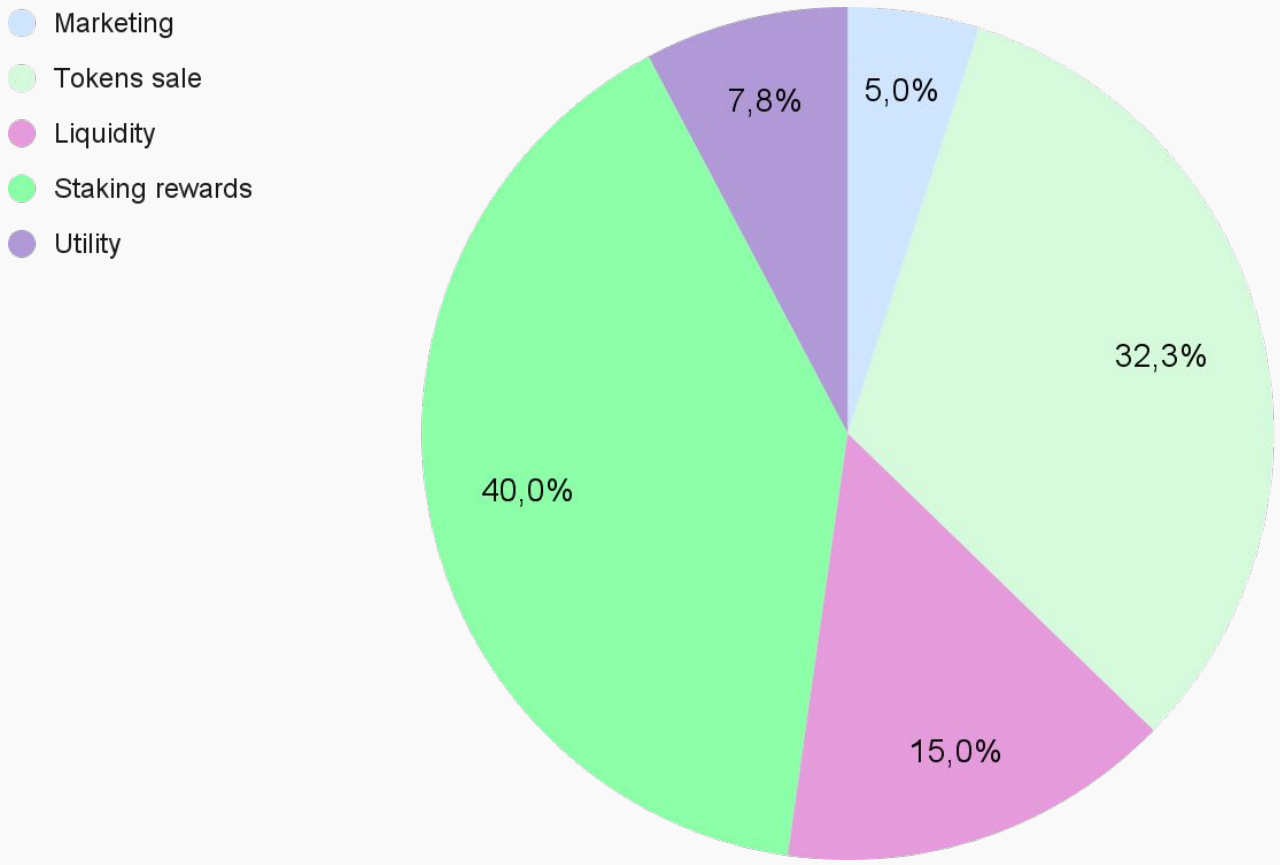
Owner can change NFTs URI (image).

```
function setURI(
    string memory _uri
) external onlyOwner {
    _setURI(_uri);
}
```

# TOKENOMICS

*The following tokenomics are based on the project's whitepaper and/or website:

- 32.25% - Token sales
- 15% - Liquidity
- 5% - Marketing
- 40% - Staking rewards
- 7.75% - Utility



# THE TEAM

The team has privately doxxed to SPYWOLF by completing the following KYC requirements:

- ID Verification
- Video statement
- Video interview with devs
- Owner's wallet verification

## KYC INFORMATION

### Issuer

SPYWOLF

### Members KYC'd

### KYC Date

July 25, 2022

### Format

Image

### Certificate Link

https://github.com/SpyWolfNetwork/KYCs/blob/main/July/KYC_Fortunas_Token_0x7759D8345badb3cBec4ff0AC0BE08Ad9BBc8A2A8.png

WEBSITE

## Website URL
https://fortunas.finance/

## Domain Registry
https://www.godaddy.com

## Domain Expiration
Expires on 2023-04-18

## Technical SEO Test
Passed

## Security Test
Passed. SSL certificate present

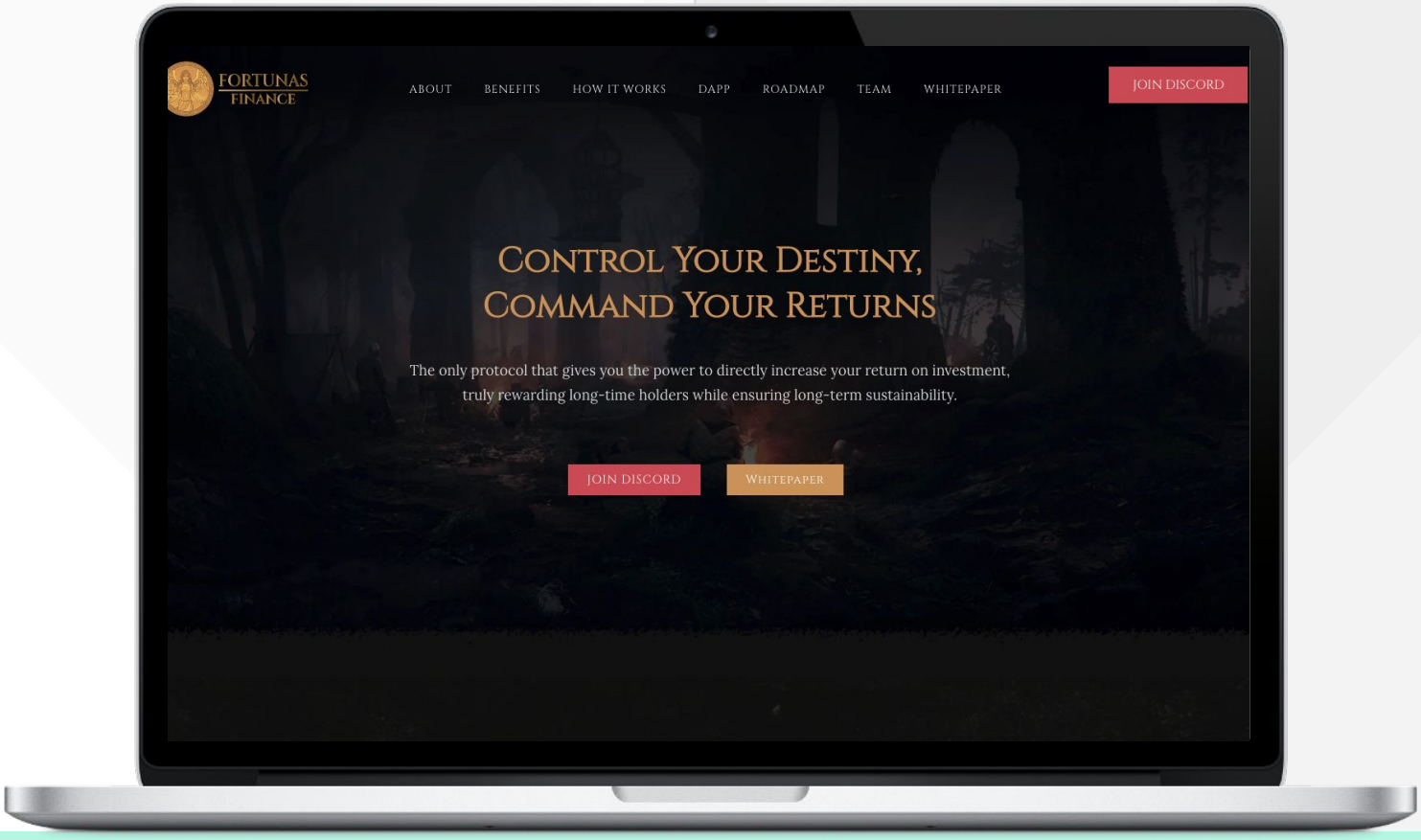
## Design
Single page design, appropriate color scheme and graphics.

## Content
The information helps new investors understand what the product does right away. No grammar mistakes found.

## Whitepaper
Well written, explanatory.

## Roadmap
Yes, goals set with time frames.

## Mobile-friendly?
Yes



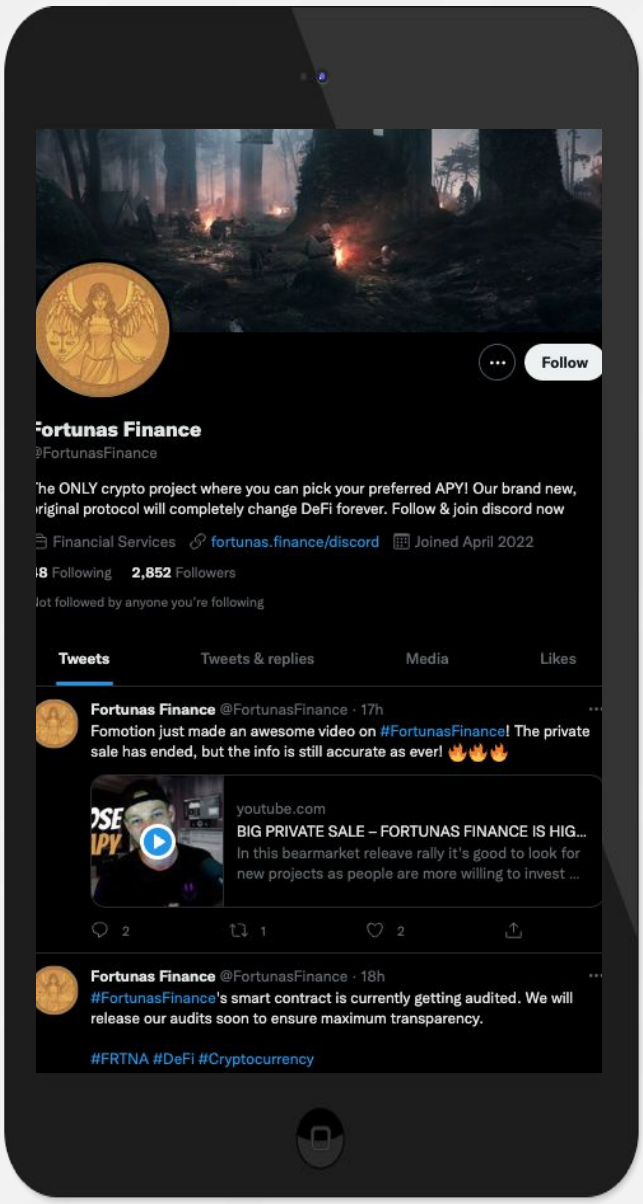

# fortunas.finance

# SOCIAL MEDIA

## & ONLINE PRESENCE

**ANALYSIS**

Project's social media presence is active with plenty of followers for a brand new project.




### Twitter

@FortunasFinance

- 2 934 followers
- Active, few posts per day

### Discord

https://discord.com/invite/JcwbT5kusn

- 644 members
- Active members
- Active mods

### Telegram

@fortunas_fi

- 805 members
- Few active members ⚠️
- Active mods

### Medium

- Not available

SPYWOLF

CRYPTO SECURITY

# ABOUT US

We are a growing crypto security agency offering audits, KYCs and consulting services for some of the top names in the crypto industry.

- **OVER 150 SUCCESSFUL CLIENTS**
- **MORE THAN 500 SCAMS EXPOSED**
- **MILLIONS SAVED IN POTENTIAL FRAUD**
- **PARTNERSHIPS WITH TOP LAUNCHPADS, INFLUENCERS AND CRYPTO PROJECTS**
- **CONSTANTLY BUILDING TOOLS TO HELP INVESTORS DO BETTER RESEARCH**

Audits | KYCs | dApps
Contract Development

To hire us, reach out to
contact@spywolf.co or
t.me/joe_SpyWolf

## FIND US ONLINE

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@SPYWOLFOFFICIAL

@SPYWOLFNETWORK

@SPYWOLFNETWORK

# Disclaimer

This report shows findings based on our limited project analysis, following good industry practice from the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, overall social media and website presence and team transparency details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report.
While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the disclaimer below – please make sure to read it in full.

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No applications were reviewed for security. No product code has been reviewed.